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10/625,396	07/23/2003	Kevin Gerard Fraser	STAR-2	9095

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Armstrong Teasdale LLP
7700 Forsyth Boulevard
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St. Louis, MO 63105

EXAMINER

YI, STELLA KIM

ART UNIT	PAPER NUMBER
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1742

NOTIFICATION DATE	DELIVERY MODE
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12/01/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary	Application No. 10/625,396	Applicant(s) FRASER, KEVIN GERARD	
	Examiner Stella Yi	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,12,14-16,19-22,24 and 27-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,12,14-16,19-22,24, and 27-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 8, 9, 12, 14, 15, 16, 19-21, 14, 17-19, 32, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by GRAEBE (4,541,136).

Regarding Claims 1, 12, 14, 19, 21, 24, 27, GRAEBE discloses a method of fabricating a cellular/inflatable cushion, said method comprising:

forming the air cells (4) in a cavity mold by injection molding (Col.7, lines 12-19) to form a cushion first layer (26) of the flexible base (2) that is formed integrally with a plurality of hollow air cells (4) (Col.3, lines 56-57) that extend outward from the said first layer (26), such that each of the plurality of cells extends only from a root defined at the first layer (26) to a tip (22) (see Figs. 2 & 5; Col.3, lines 35-38 and 53-54), and such that the plurality of channels (32) aligned substantially within the same plane and extending between adjacent said hollow air cells (4) (Col.4, lines 1-9; see Figs. 3 & 5), and wherein the plurality of said hollow air cells (4) are configured to expand only radially outward towards each other as an operating pressure within the cells is increased (Col.5, lines 13-45);

coupling a second layer (28) (sealing layer) to the first layer (26) (Col.3, lines 53-55); and

coupling a filling tube (6) (injection stem) in flow communication to the plurality of hollow air cells (4) to enable an operating pressure within only the plurality of hollow cells (4) extending from the same layer (26) to be changed (Col.3, lines 49-52; Col.5, lines 9-11; Fig.1).

Regarding Claims 4, 15, 16, 32, and 33, GRAEBE discloses coupling communicating strips (30) (third layer) to at least one of the first layer (26) and second layer (28) (Col.3, lines 63-38) wherein at least one of the second layer (28) and first layer (26) includes a plurality of fluid control devices (32) that are coupled together in flow communication, and wherein each fluid control device is positioned between adjacent hollow air cells (4) for selectively controlling flow communication independently to each of the plurality of hollow air cells (Col.4, lines 1-9; see Figs. 3 & 5). A filling tube (6) (inflation stem) is coupled in flow communication to the plurality of said hollow air cells (4) (Col.3, lines 49-52; Col.5, lines 9-11; Fig.1; Claims 1-3).

Regarding Claim 8, GRAEBE discloses coupling a filling tube (6) (injection stem) in flow communication to the plurality of hollow air cells (4) to enable an operating pressure within only the plurality of hollow cells (4) extending from the same layer (26) to be changed (Col.3, lines 49-52; Col.5, lines 9-11; Fig.1).

Regarding Claims 9 and 20, GRAEBE discloses coupling the second layer (sealing layer) (28) to the first layer (flexible base) (26) by bonding it firmly together with rubber cement to form an air-tight seal along the periphery of the cushion (Col.4, lines 12-14) wherein bonding it firmly together with rubber cement is an adhesive process.

Art Unit: 1742

Regarding Claim 28, GRAEBE discloses the said strips (30) (release agent) prevents the upper and lower sheets (26) and (28) of the flexible base (2) from bonding together where they lie such that the strips (release agent) is contained within each of the plurality of ducts or channels (passageways) in flow communication (Col.3, lines 66 through Col.4, line 1).

Regarding Claim 29, GRAEBE ('136) discloses that communicating strips (30) (third layer) (outer layer) need not be separate elements of the base (2), but instead they may be formed integral with either the said upper sheet (26) (first layer) or the lower sheet (28) (second layer) (Col.6, lines 46-49).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 5-7, 22, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over GRAEBE (4,541,136) as applied to claims 1, 4, 8, 9, 12, 14, 15, 16, 19-21, 14, 17-19, 32, and 33above, and further in view of GRAEBE (5,561,875).

The teachings of GRAEBE ('136) are applied as described above for claims 1, 4, 8, 9, 12, 14, 15, 16, 19-21, 14, 17-19, 32, and 33.

Regarding Claims 2 and 22, GRAEBE discloses a method of fabricating a cellular cushion, said method comprising:

forming the air cells (4) in a cavity mold by injection molding (Col.7, lines 12-19) to form a cushion first layer (26) of the base (2) that is formed integrally with a plurality of hollow air cells (4) (Col.3, lines 56-57) that extend outward from the said first layer (26) but is silent to a constant or uniform wall thickness. However, GRAEBE ('875) who also discloses that the formation of such thin walled flexible air cells can be achieved by injection molding (Col.4, lines 46-48) also teaches that all corners above the cell base (13) and the upstanding side walls (2) shown in Figure 1 have generous radii while maintaining uniformity of wall thickness to distribute stresses in the material used to form the cell (Col.7, lines 20-27). Such uniform wall thickness enhances life and function of the cells. Therefore, it would have been obvious to one of ordinary skill in the art to have modified the method of fabricating the cellular cushion of GRAEBE ('136) to include injection molding the air cells such that the plurality of the air cells formed are each defined by a wall having substantially uniform (constant) thickness across the first layer as taught by GRAEBE ('875). As disclosed by GRAEBE ('875), the motivation for the combination would have been to reduce stress points in the air cells by creating a uniform wall thickness that can evenly distribute the stress in the cell thereby enhancing its life and function (Col.7, lines 20-27).

Regarding Claims 5 and 31, GRAEBE ('136) is silent to coupling the said third layer to the first layer such that the first layer is between the second and third layers. However, GRAEBE ('136) discloses that the said communicating strips (30) (third layer)

Art Unit: 1742

need not be separate elements of the base (2), but instead they may be formed integral with either the said upper sheet (26) (first layer) or the lower sheet (28) (second layer) (Col.6, lines 46-49). Therefore, it would have been obvious to one of ordinary skill in the art that the third layer may be coupled to the first layer such that the first layer is between the second and third layers of GRAEBE ('136).

Regarding Claims 6 and 30, GRAEBE ('136) is silent to coupling the said third layer to the second layer such that the second layer is between the first and third layers. However, GRAEBE ('136) discloses that the said communicating strips (30) (third layer) need not be separate elements of the base (2), but instead they may be formed integral with either the said upper sheet (26) (first layer) or the lower sheet (28) (second layer) (Col.6, lines 46-49). Therefore, it would have been obvious to one of ordinary skill in the art that the third layer may be coupled to the second layer such that the second layer is between the second and third layers of GRAEBE ('136).

Regarding Claim 7, GRAEBE discloses coupling communicating strips (30) (third layer) to at least one of the first layer (26) and the second layer (28) further comprises:

inserting the plurality of hollow air cells (4) through a plurality of openings (32) formed within the said third layer (30) (Col.4, lines 1-3), such that each respective hollow air cell extends through a respective third layer opening (see Figure 5).

GRAEBE ('136) discloses in Figure 5, coupling the third layer (30) to the second layer (28) such that the third layer (30) is in between the first layer (26) and second layer (28) but is silent to coupling the third layer (30) to the first layer (26) such that the first layer (26) is between the second (28) and third (30) layers (see Figure 5). However,

Art Unit: 1742

GRAEBE ('136) discloses that the said communicating strips (30) (third layer) need not be separate elements of the base (2), but instead they may be formed integral with either the said upper sheet (26) (first layer) or the lower sheet (28) (second layer) (Col.6, lines 46-49). Therefore, it would have been obvious to one of ordinary skill in the art that the third layer may be coupled to the first layer such that the first layer is between the second and third layers of GRAEBE ('136).

Response to Arguments

Applicant's arguments filed September 22, 2010 have been fully considered but they are not persuasive.

Applicant Argues:

a) Graebe does not describe nor suggest injecting material into a mold to form a first cushion layer that is formed integrally with a plurality of hollow cells. While Graebe discloses at col.3, lines 56-57, that an upper sheet (26) is formed integral with cells (4), Graebe also discloses at col. 4, lines 20-24 that cells (4) and upper sheet (26) are integrally formed by dipping a form (34) in a latex bath. Dipping form (34) in a latex bath is not equivalent to forming cells (4) and upper sheet (26) via an injection molding process.

b) Graebe is silent with respect to the expansion of cells (4) only in a radial direction as the operating pressure within cells (4) is increased.

c) Graebe does not disclose the fluid control devices recited in Claim 12 and thus wholly fails to contemplate a method for fabricating a flexible cushion having the flow control devices recited in Claim 12.

Examiner respectfully disagrees with the Applicant's above arguments and would like to point out the reason(s) as discussed in the rejection:

a) Graebe discloses in col.7, lines 12-19: "the air cells (4) may also be formed in a cavity mold, in which case the pedestal (10) may be eliminated altogether (Fig.10). Thus, the **side walls (14) for all of the fins (12) would rise directly from the upper sheet (26)** of the base (2), as would the concave connecting walls (18). Rotational molding and injection molding may be used to form the air cells (4) without pedestals (10), both of these processes using cavity molds". In other words, Graebe teach injecting material into a cavity mold that forms the said first cushion layer (26) which rises up to form the said side walls (14) and fins (12) which form the air cells (4). Therefore, Graebe does describe and suggest injecting material into a mold to form a first cushion layer that is formed integrally with a plurality of hollow cells.

b) Graebe discloses coupling a filling tube (6) (injection stem) in flow communication to the plurality of hollow air cells (4) to enable an operating pressure within only the plurality of hollow cells (4) extending from the same layer (26) to be changed (Col.3, lines 49-52; Col.5, lines 9-11; Fig.1).

Graebe further discloses that when cushion A is inflated, as it must be in order to be used, the side walls (14) of the fins (12) s well as the concave walls (18) between the

Art Unit: 1742

fins (12) and the inclined walls of the pedestal (10) move outwardly (Col.5, lines 13-16).

As seen in Figures 2, 5, 8, and 10, the air cells are formed in a radial direction.

c) Graebe discloses coupling communicating strips (30) (third layer) to at least one of the first layer (26) and second layer (28) (Col.3, lines 63-38) wherein at least one of the second layer (28) and first layer (26) includes a plurality of **fluid control devices (32)** that are coupled together in flow communication, and wherein each fluid control device is positioned between adjacent hollow air cells (4) for selectively controlling flow communication independently to each of the plurality of hollow air cells (Col.4, lines 1-9; see Figs. 3 & 5). A filling tube (6) (inflation stem) is coupled in flow communication to the plurality of said hollow air cells (4) (Col.3, lines 49-52; Col.5, lines 9-11; Fig.1; Claims 1-3). Furthermore, the cushion is made of flexible elastomeric material (Abstract and claim 1).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1742

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stella Yi whose telephone number is 571-270-5123.

The examiner can normally be reached on Monday - Thursday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SY

/Jeff Wollschlager/
Primary Examiner, Art Unit 1742

Application/Control Number: 10/625,396
Art Unit: 1742

Page 11